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Classroom Instruction *that Works*

RESEARCH-BASED STRATEGIES FOR INCREASING STUDENT ACHIEVEMENT

2nd Edition

Introduction: Instruction That Makes a Difference

"The only way to improve outcomes is to improve instruction."

—Michael Barber & Mona Mourshed, *How the World's Best-Performing School Systems Come Out on Top*

Marisa and her friend Alex, two middle school students, are on the way to their second period classes. Alex complains that Mr. Sommerville's class isn't very interesting, and he doesn't learn much in it.

Marisa: I'm looking forward to my class with Ms. Hastings. She makes everyone feel like they can learn math. She always says "hi" to us when we come into class, and she expects us to get right down to work. She has a problem on the board for us to solve on our own, or we check in with our base group.

Alex: What's a base group?

Marisa: It's a group that stays together for a semester. We do some team building activities and other fun stuff to get to know one another. That makes it easier to speak up in class.

Alex: Mr. Sommerville is usually busy at his desk when we come in, and we just talk until a few minutes after the bell. Then he asks us to be quiet, and he starts his lecture. Mostly, we're just bored. Some kids even put their heads down on their desks.

Marisa: We'd never do that in Ms. Hastings's class! She'd think we were sick or something. She expects us to do our best every day, and she tells us lots of stories about people who worked

and succeeded. She likes us to share stories like that about ourselves or other people we know. We even keep track of how much effort we're putting into our work and how much we're learning. Sometimes I get discouraged, but Ms. Hastings always says something to help me see what I *do* know and what I can do to get better.

Alex: I wish Mr. Sommerville was more like Ms. Hastings. Maybe then I'd care more about learning and get better grades.

Compare Ms. Hastings's and Mr. Sommerville's approaches to teaching. Ms. Hastings has strong relationships with her students, high expectations for their performance, and an understanding of the kind of support students need to succeed in the classroom. Mr. Sommerville seems disconnected from his students both in terms of personal relationships and in his use of strategies that will help them learn.

Our goal as authors is to help teachers add to and polish the tools in their instructional toolkits so they can be more like Ms. Hastings and less like Mr. Sommerville. To accomplish that goal, we present nine categories of instructional strategies and relevant classroom practices that use them. These nine categories include

- Setting Objectives and Providing Feedback
- Reinforcing Effort and Providing Recognition
- Cooperative Learning
- Cues, Questions, and Advance Organizers
- Nonlinguistic Representations
- Summarizing and Note Taking
- Assigning Homework and Providing Practice
- Identifying Similarities and Differences
- Generating and Testing Hypotheses

There is evidence that an individual teacher can have a significant effect on student achievement, even if the school does not (Brophy & Good, 1986; Sanders & Horn, 1994; Wright, Horn, & Sanders, 1997). To ensure that all students succeed academically, we believe that high-quality instruction must be the norm and not the exception within schools and across districts. This requires

teachers to develop a common language for instruction and effectively use a common set of instructional strategies that have a high likelihood of increasing student achievement. We offer the strategies in this book as one such set.

We do not claim that these strategies are “silver bullets” or that they will be effective in all circumstances. Rather, they are “best bets” if teachers incorporate them systematically and intentionally as they plan and deliver instruction. Teachers must know what each strategy entails (i.e., its component parts), how and when to use each strategy, and why each works in specific circumstances. To get the most out of this approach, teachers must bring to bear their knowledge of and skill with the instructional strategies, and they must exercise judgment and wisdom with regard to the use of the strategies. As Walberg notes, “The best saw swung as a hammer may do little good” (1999, p. 76).

Research Behind the Strategies

The strategies featured in this book were identified through a meta-analysis of instruction conducted by McREL (Marzano, 1998) and presented in the first edition of *Classroom Instruction That Works* (Marzano, Pickering, & Pollock, 2001). This second edition builds on that research and incorporates findings from a study that clarifies the concepts related to each of the nine categories identified in the first edition (Beesley & Apthorp, 2010), and it uses an analysis of the literature published since the first edition to provide an updated estimate of each strategy's effect on student achievement. We present these effect sizes as part of the discussion of each strategy.¹

For the 2010 study, McREL researchers synthesized primary studies for each strategy and calculated a measure of its effects when there were sufficient quantitative data. This approach differs from the original study (Marzano, 1998), which synthesized findings from prior meta-analyses. To update conceptual clarity around each category of strategy, McREL researchers used narrative

¹ An effect size expresses the increase or decrease, in standard deviation units, in the outcome (e.g., achievement) for an experimental group (e.g., the group of students who are exposed to a specific instructional technique) versus a control group. Using a statistical conversion table, we can translate effect sizes into percentile point gains. For example, an effect size of 1.00 translates to a 34 point percentile difference that favors students instructed under the experimental conditions. Another interpretation is that, all else being equal, we would expect a student performing at the 50th percentile under the control condition (instruction that does not include the strategy) to improve to the 84th percentile under the experimental condition (instruction that includes the strategy).

reviews, qualitative research, and theoretical literature. For details about the study methodology, see the technical report (Beesley & Apthorp, 2010).²

Organization of the Book

This book, which is organized into four parts, includes information that will help teachers understand what each strategy includes, how to use it, when it is most effective in teaching, and why it works. The first three parts (Chapters 1 through 9) focus on the strategies and include recommended classroom practices, examples of the strategies in use, tips for teaching, and information about using the strategies with today's learners. The tips are drawn from information within each chapter and from our experience working with teachers who are learning about and using these strategies successfully in their own classrooms. The fourth part (Chapter 10) presents specific guidance on how to use the strategies to plan for instruction that targets different types of knowledge. Information on how teachers, principals, and support staff can use this book differently can be found at www.ascd.org/citw.

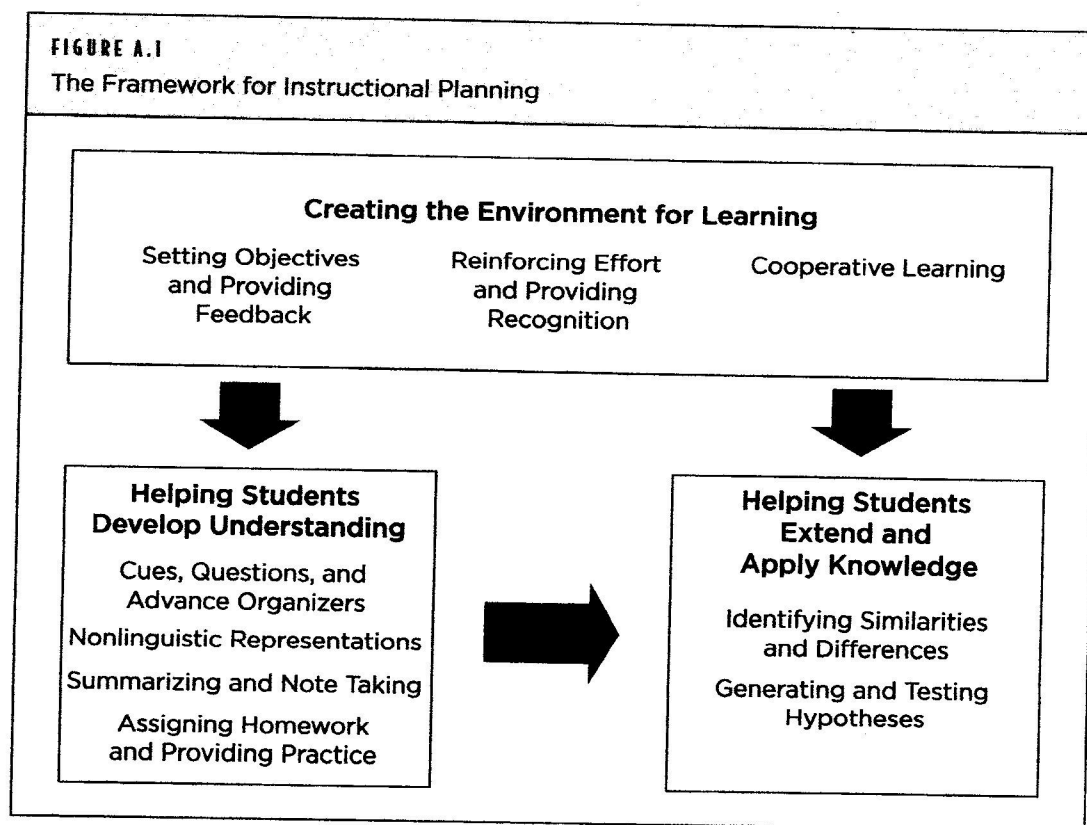
In the first edition of *Classroom Instruction That Works*, the strategies were presented according to the magnitude of their average effect size (from largest to smallest). That presentation encouraged some schools and districts to focus on the first three or four strategies with the highest effect sizes without regard to *when* those strategies should be used. For example, teachers were asked to focus on identifying similarities and differences as often as possible, yet they found this difficult to do in the early part of a unit when students didn't have a basic understanding of the concepts and vocabulary related to the topic. This focus on the strategies with the highest effect sizes often meant that those at the bottom of the list were disregarded or considered less important. As a result, teachers often minimized their use of key practices that help students activate background knowledge (cues, questions, and advance organizers) and use higher-order thinking skills (generating and testing hypotheses).

In this second edition of *Classroom Instruction That Works*, the strategies are organized and presented within a framework that is geared toward instructional planning. This helps readers learn about each strategy in the context

² The technical report, *Classroom Instruction That Works, Second Edition, Research Report* is available for free download at www.mcrel.org.

Strategies in the third component of the framework—Helping Students Extend and Apply Knowledge—emphasize the importance of helping students move beyond “right answer” learning to an expanded understanding and use of concepts and skills in real-world contexts. These strategies help students become more efficient and flexible in using what they have learned. They involve the use of complex reasoning processes, which are necessary for students to use knowledge meaningfully (Marzano & Pickering, 1997). Figure A.1 illustrates where each strategy fits in the framework.

FIGURE A.1
The Framework for Instructional Planning



Laying the Foundation

In the remainder of this introduction, we provide some principles of learning that are derived from research and theory on learning and which inform

educators' understanding of how students learn. We provide an explanation of current thinking about the skills that are important for students to acquire in the 21st century; the strategies in this book are useful for helping students acquire many of those skills. Finally, we provide information about the importance of teachers' relationships with students in the learning process (which is essential to the first step of the framework).

Research-based teaching and learning in the 21st century

What does teaching and learning look like as we enter the second decade of the 21st century? Teachers today face classrooms that are increasingly diverse, both culturally and linguistically (Goodwin, Lefkowitz, Woempner, & Hubbell, 2011). They must motivate students to attend to learning in environments dominated by external influences such as sports, television, social networking, texting, video games, and the Internet. They must develop new skills or modify existing skills to meet the needs of students who are used to learning through technology.

Linda Darling-Hammond and her colleagues (2008) emphasize that the principles of learning identified by Suzanne Donovan and John Bransford (2005), and paraphrased here, should guide teaching in the 21st century:

1. Students come to the classroom with prior understandings and experiences. To promote student learning, teachers must address and build upon this prior knowledge.
2. Students must have factual and conceptual knowledge in order to develop deep understanding and effectively retrieve and apply knowledge in real-world contexts.
3. Students learn more effectively when they are aware of how they learn and know how to monitor and reflect on their learning.

Focusing on these principles will help teachers prepare students to meet the demands they will face as part of the workforce—solving problems flexibly, thinking critically, and using their knowledge and skills in new situations (Darling-Hammond et al., 2008). The nine categories of instructional strategies (Figure A.2) reflect these principles and help teachers address what is known about learning.

FIGURE A.2
The Nine Categories of Instructional Strategies

Category	Definition
Setting Objectives and Providing Feedback	Provide students with a direction for learning and with information about how well they are performing relative to a particular learning objective so they can improve their performance.
Reinforcing Effort and Providing Recognition	Enhance students' understanding of the relationship between effort and achievement by addressing students' attitudes and beliefs about learning. Provide students with abstract tokens of recognition or praise for their accomplishments related to the attainment of a goal.
Cooperative Learning	Provide students with opportunities to interact with one another in ways that enhance their learning.
Cues, Questions, and Advance Organizers	Enhance students' ability to retrieve, use, and organize what they already know about a topic.
Nonlinguistic Representations	Enhance students' ability to represent and elaborate on knowledge using mental images.
Summarizing and Note Taking	Enhance students' ability to synthesize information and organize it in a way that captures the main ideas and supporting details.
Assigning Homework and Providing Practice	Extend the learning opportunities for students to practice, review, and apply knowledge. Enhance students' ability to reach the expected level of proficiency for a skill or process.
Identifying Similarities and Differences	Enhance students' understanding of and ability to use knowledge by engaging them in mental processes that involve identifying ways in which items are alike and different.
Generating and Testing Hypotheses	Enhance students' understanding of and ability to use knowledge by engaging them in mental processes that involve making and testing hypotheses.

Essential skills for 21st century learners

The conversation about 21st century learners has centered on the skills students need to be college and career ready and economically competitive. According to David Conley, one of the key dimensions of college readiness in the 21st century deals with cognitive strategies, which he describes as "patterns of intellectual behavior that lead to the development of mental processes and capabilities necessary for college-level work" (2007, p. 9). These strategies

include problem solving, research, analysis, interpretation, reasoning, and precision and accuracy. Conley emphasizes that students develop these skills over time through intentional practice and use, and the skills ultimately lead students to “think about the world in complex ways” (p. 10). Daniel Pink takes another tack when he emphasizes that students cannot rely solely on “left-brain” skills for success in the 21st century. They also need to be able to design innovations, communicate through compelling stories, develop rapport with others, and synthesize seemingly disconnected pieces of information in new ways (Pink, 2005). The Partnership for 21st Century Skills (n.d.) emphasizes that students need specific knowledge in core subjects as well as an understanding of such 21st century themes as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; and environmental literacy.

Those who advocate for educating the whole child echo much of what is promoted by the Partnership for 21st Century Skills. They support the idea that education today must go beyond the three Rs of yesterday to encompass a range of skills that will help students function as productive citizens who are health conscious, appreciative of the arts, and aware of the importance of good manners and social skills (Scherer, 2007).

The nine categories of instructional strategies are “best bets” for developing 21st century learners because they help students set personal learning goals, self-check for understanding, access tools and resources for enhancing their understanding, and use what they have learned in real-world contexts. These skills are vital for success in a postindustrial world where it is more important to know how to access information and be a self-motivated learner than it is to memorize content and processes. By using these strategies, teachers can move beyond “teaching content” to teaching students how to learn—that is, find and evaluate content, connect with prior knowledge, and use that knowledge to solve authentic problems. The strategies in this book also help teachers create challenging, emotionally safe learning environments; actively engage students in learning; connect students to teachers and one another in productive ways; and help students develop critical thinking skills that prepare them for higher education and the workforce.

The importance of student-teacher relationships in the classroom

One of the most important influences on student achievement is the relationship between the teacher and students (Hattie, 2009). If you ask any student what makes a good teacher, the answer is likely to be something that reflects the importance of this relationship. Teachers who have good relationships with students care about students as people and learners. They hold high expectations for their students, convey these expectations to their students, and help their students meet these expectations. They design learning activities that are worthy of students' effort, are relevant to students' lives, and require higher-order thinking (Brophy, 2004). They are warm and empathetic and establish a sense of community within the classroom where they respect students and where students respect them and one another (Goodwin, 2011). When teacher-student relationships are not strong, student learning suffers.

Inherent to establishing a positive learning environment is a growth mind-set, which means teachers view student achievement as something that can be changed through "application and experience" (Dweck, 2006, p. 7). Teachers' words and actions make it clear that student achievement depends on hard work and effort and is not set in stone by past performance. When teachers promote a growth mind-set, they focus students on "self-development, self-motivation, and responsibility" and help them develop the mental determination to continue improving and learning (p. 107). The strategies included in the first section of the organizing framework for this book (Setting Objectives and Providing Feedback, Reinforcing Effort and Providing Recognition, and Cooperative Learning) promote a growth mind-set and help teachers establish positive student-teacher relationships. In addition, these strategies help students develop a belief in their ability to positively affect their learning. This increased self-efficacy motivates students to engage in learning and persist when they encounter difficult content. The strategies in the remaining categories also contribute to positive student-teacher relationships by providing opportunities for higher-order thinking.